



STATE OF MAINE
DEPARTMENT OF CONSERVATION
22 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0022

JOHN ELIAS BALDACCI
GOVERNOR

PATRICK K. McGOWAN
COMMISSIONER

Memorandum

To: Commission Members
From: Marcia Spencer Famous, Senior Planner
Date: November 29, 2005
Subject: Comprehensive Land Use Plan Discussion Series: Panel Presentation on Windpower Development

An overview of windpower development in Maine will be presented, touching upon a wide range of issues, including, but not limited to, windpower as a part of Maine's energy mix, environmental concerns both in support of and in opposition to wind power development, economic issues, wildlife concerns, and windpower siting guidelines. Staff will present two short summaries of background material, followed by a panel of seven speakers, including Beth Nagusky (Maine's Director of Energy, Independence and Security) and representatives from the Natural Resources Council of Maine, the Maine Department of Inland Fisheries and Wildlife, Maine Audubon, the Appalachian Mountain Club, the Public Utilities Commission, and the American Wind Energy Association. The panelists will do short presentations, after which the floor will be open for discussion. In addition, Beth Nagusky has been asked to start her presentation with a discussion of the general energy picture in Maine.

Staff presentations

Marcia Spencer Famous: Marcia will provide a brief summary of windpower projects in LURC jurisdiction, windpower in the current Comprehensive Land Use Plan, LURC's regulatory perspective, and staff's participation in collaborative activities for the development of State windpower policies [attached].

Summary of panelist presentations

Beth Nagusky, Maine's Director of Energy, Independence and Security: Beth will present an overview of Maine's energy picture, and explain how windpower fits into the State's energy mix.

Mitch Tannenbaum, Public Utilities Commission (PUC): Although the PUC has no regulatory jurisdiction over wind generation projects, it produced a report for Legislature in January of 2005 on windpower development in Maine. Among other things, the report covered the potential for

windpower to contribute to economic development in Maine, and the pros and cons of windpower development in Maine [attached].

Tom Gray, American Wind Energy Association: Tom will discuss the current status and near-term outlook for the wind industry in the United States, and provide some brief comments on typical siting concerns.

Pete Didisheim, Natural Resources Council of Maine (NRCM): Pete will provide an overview of various aspects of energy production and windpower development including climate change, general environmental concerns, windpower development in New England and in Maine, and NRCM's perspective.

David Publicover, Appalachian Mountain Club: Dave will discuss the Appalachian Mountain Club's (AMC) position on windpower development. In general, AMC supports windpower, and is advocating for a pro-active approach and the development of windpower siting guidelines. AMC currently is developing analytical tools for assessment of windpower sites.

Jody Jones, Maine Audubon: Jody will give an overview of what is currently known about the risks associated with windpower development and wildlife and she will briefly discuss Maine Audubon's role in a stakeholder process regarding guidelines for windpower siting.

Tom Hodgman, Inland Fisheries and Wildlife (IFW): Tom will provide a brief summary explaining: (1) why birds and bats are issues with windpower; (2) how IFW would recommend addressing these issues with collection of appropriate field data; and (3) assessment of potential impacts and mitigation measures.

Enc: Summary of windpower activities in LURC jurisdiction
[Regulatory Process for Energy Projects w/Flow Charts](#)
Draft Guidance on Agency Review of Windpower
[Report on the Viability of Windpower Development in Maine, 2005](#)



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Re: Summary of windpower in LURC jurisdiction

COMPREHENSIVE LAND USE PLAN

The Comprehensive Land Use Plan ('Plan') holds the position that 'The State energy policy should meet the state's energy needs with reliable energy supplies at the lowest possible cost', and 'ensure that energy production is consistent with Maine's goals for a healthy environment and a vibrant economy.' The Plan's goal for energy production is to 'provide for the environmentally sound and socially beneficial utilization of indigenous energy resources where there are not overriding, conflicting public values which require protection.' The Plan's energy policies applicable to windpower development 'encourage the use of indigenous renewable resources', 'allow new or emerging energy technologies which do not have an undue adverse impact on existing uses and natural resources', and 'limit the scale of new or emerging energy technologies where feasible to allow time for the Commission to evaluate the technology and its impacts in large scale applications.'

In the early 1990's LURC reviewed the Kenetech Windpower proposal, which would have been a very large windpower facility in the Boundary Mountains had it been built. As a new technology, and due to the large scale of the proposal as well as its location in high mountain areas in an undeveloped area of the state, the project generated a significant amount of public interest. The sections in the Plan on windpower were written largely in response to that project. The area now being evaluated by TransCanada Energy is the continuation of the Kenetech Windpower project. Several other areas are also being considered for windpower development, with submittal of an application by Redington Mountain Windpower expected this fall.

The Plan recognizes that windpower facilities would be sited in areas of Maine where there is an adequate wind resource, which in the 1990's was assumed to be primarily high mountain areas. A decade later, new technologies have changed this basic assumption to some degree, allowing other areas to be considered for windpower facilities. The Plan recognizes the sensitivity of high mountain areas, and discusses careful evaluation of proposed sites, with the approach being to strike a 'balance between utilization of the resource and potentially conflicting public values'. Four key areas of concern are identified: visual, soils, and wildlife impacts, and technical feasibility. However, because of the limited supply of mountain resources and their value, the

Plan states that it is unlikely all high mountain areas would be suitable for rezoning and development, but that ‘ proposed windpower sites are most appropriately rezoned to the Planned Development (D-PD) Subdistrict.’ Finally, the Plan supports the idea of conducting a state-wide comprehensive study to determine sites either most or least appropriate for windpower development.

Relevant sections of the Plan pertaining to windpower and development of indigenous energy sources are included at the end of this memo as Appendix A for your reference.

REGULATORY PERSPECTIVE

As stated in the Comprehensive Land Use Plan, a permit application for a windpower facility would be reviewed as a request to rezone to a D-PD Subdistrict and a Development Plan. The rules pursuant to the D-PD Subdistrict (Section 10.21,G of the Commission’s Land Use Districts and Standards) lay out a mechanism for permitting development that needs to be located where the resource is available while maintaining the protection of other natural resources that was afforded by the original Subdistrict. The D-PD Subdistrict is also appropriate for windpower development because it does not provide adjacency for other future Development Subdistricts. The D-PD process proceeds in two parts, the first for the rezoning and Preliminary Development Plan, and the second for a Final Development Plan.

PERMIT ACTIVITIES

1. Redington Mountain Windpower (Harley Lee) [i.e. Endless Energy Corporation]

- Permit - 11 meteorological towers on two ridgelines in Redington Twp., Franklin County; 1994 - 2004
- Landowner - Endless Energy
- High mountain area, near Sugarloaf, 1 mile from the Appalachian Trail
- Submit wind power facility application for 30 turbines, anticipated in fall 2005
 - 90 MW (to produce 265,000,000 kWh per year, or 2.2% of Maine’s power)
 - Total development cost: \$130 million
 - Coordinated review - LURC and DEP
 - Abuts the Navy Survival School

2. Linekin Bay Energy Company (Chris Herter)

- Working with Horizon Wind Energy (and Goldman Sachs Group)
- Two permits issued November 2005 - single meteorological towers in Cyr Plt. and Hamlin, Aroostook County
 - Lots leased from private landowners, active potato fields
 - Four other meteorological towers in organized towns
 - Total cost for two towers - \$35,000
- Wind power facility - approximately 500 MW (in organized and unorganized)
 - Number of turbines – 165 to 325 (depends on turbine size, preliminary estimate)
 - Approximately 30% in unorganized (preliminary estimate)

- No projected date for permit application
- Coordinated review - DEP and LURC

3. TransCanada Energy, Ltd. (Parent company: TransCanada Corporation)

- Working with GE Energy (has the development rights)
- Land owner - Plum Creek
- 8 meteorological towers approved November 2005
 - Three ridgelines in Kibby and Skinner Twps., Franklin County; high mountain areas
 - Development cost: \$972,250
 - Opposed by Friends of the Boundary Mountains
- History
 - Kenetech (US Windpower) - Four meteorological towers, 1991 to 1994
 - Kenetech - Rezoning and Preliminary Development Plan for wind power facility and utility line, 1995 to 1997
 - Friends of the Boundary Mountains appeal denied, 1995
 - Final Development Plan never applied for
- Wind power facility application, possibly fall 2005 or 2006
 - 100-200 MW, number of turbines unknown
 - Kibby, Skinner and Merrill Twps.
 - Now doing environmental surveys

4. Passamaquoddy Tribe at Pleasant Point

- Two permits issued October 2005 - single meteorological towers
 - T19 MD, Washington County (blueberry fields)
 - Prentiss Twp., Somerset County (forest land, not a high mountain area, near US/Canada boundary)
 - Total development cost: \$152,000
 - Funded by the Bureau of Indian Affairs
- On Tribal trust lands
- T19 windpower facility, possibly 50-80 MW, 30 turbines
- Prentiss Twp. facility – size unknown, depends on negotiations with Canada
- No projected date for wind power facility application
- Working with Distributed Generations Systems, Colorado (working on windpower development with other tribes around the country)

POLICY ACTIVITIES

- LURC, DEP and PUC staff jointly prepared an outline of the wind power permitting process that is posted on LURC's web site.
- LURC/DOC, DEP and SPO jointly develop draft wind power siting guidance, 2004 to 2005
- Report: *The Viability of Windpower Development in Maine*, January 2005; Maine PUC

- Panel presentation on windpower to Commission, CLUP update information series, December 2005
- Audubon, Wildlife Policy for Wind Power Development
 - Stakeholders: DEP, LURC, MDIFW, USFWS, Audubon, PUC, industry reps, various consultants
 - Developing wildlife monitoring protocols, fall 2005
 - Working toward a product that will merit statewide endorsement, December 2005

Appendix A: Excerpts on Windpower and Energy Resources from the 1997 Comprehensive Land Use Plan (windpower references are underlined)

CHAPTER 3

p. 39: [H]ydropower, biomass, wind, and solar resources have the greatest potential to be significant contributors to Maine's energy mix.

p. 40: **WINDPOWER**

Windpower is the subject of considerable interest in Maine. Maine's wind resource is considerable, and much of it occurs along high mountain tops and ridges within the jurisdiction. These winds have the potential to power wind energy technologies that appear to compete with more traditional energy sources. To date, the Commission has reviewed one major windpower project located in the Boundary Mountains area.

p. 40: **LURC REGULATORY APPROACH**

A number of protection zones are applied to resources that can be used for energy production, such as High Mountain Area Protection zones, Shoreland Protection zones, and Wetland Protection zones. In all of these cases, the focus of these zones is the resource, not the energy which can be produced from it.

The Commission addresses energy resources principally through the development review process when it evaluates proposals that involve energy production (eg. dams or wind towers) or the harvesting of fuel (eg. peat harvesting). The Commission is directed by a number of policies designed to guide the balancing act between utilization of the resource and other potentially conflicting public values.

p. 40-41: **ENERGY RESOURCE ISSUES**

Windpower

As a renewable form of energy, windpower offers an attractive alternative to the burning of fossil fuels. Large windpower installations, however, have the potential to conflict with other values of the jurisdiction, particularly those associated with mountain areas, the areas where

wind power developers have focused their efforts to date. This issue is discussed in more detail in the Geologic Resources section.

Energy Planning

Utilization of energy resources often raises complicated questions about how to balance among potentially competing uses of a resource. Most energy projects have tangible benefits, but they may also impinge upon other uses of a resource or adversely affect a resource. In these cases, the Commission must balance these competing interests based on the needs and values of the jurisdiction as well as the state.

The Commission on Comprehensive Energy Planning, directed by the Legislature to make recommendations for a state energy policy, completed its work in 1992. This Commission noted that the state's energy policy should address the cost, reliability, environmental impact, and economic impact of energy projects. It stated that the goal of the state's energy policy should be to meet the state's energy needs with reliable energy supplies at the lowest possible cost, while at the same time ensuring that energy production is consistent with Maine's goals for a healthy environment and a vibrant economy. The Land Use Regulation Commission supports this goal and will try to advance it in its review of potential energy projects.

p. 58: GEOLOGIC AND MOUNTAIN RESOURCE ISSUES

Mountain Resources

Mountains and the scenic, natural, recreational, economic and other values they possess are a limited resource in Maine. Mountain areas are increasingly popular sites for recreational facilities, vacation homes and windpower generation. Mountain development carries a significant risk of erosion due to steep slopes and the high erosion potential of many mountain soils. It also threatens to diminish many of the values associated with mountain areas, including scenic qualities and vegetative communities. Consequently, proposed uses of mountain areas must be carefully evaluated to ensure that important values associated with these areas will be preserved for this and future generations. The Commission recognizes that there is disagreement about the significance of high mountain values. It will continue to consider all perspectives when evaluating specific proposals.

p. 58-59: While many of the jurisdiction's mountain areas have excellent wind energy resources, wind turbines and associated infrastructure have the potential to compromise the values the P-MA zone is designed to protect. Proposed windpower sites are most appropriately rezoned to the Planned Development (D-PD) Subdistrict, and a number of issues deserve particular attention during the rezoning and site development process. They include:

- Visual impacts. Turbines and power lines sited on mountaintops and ridgelines have the potential to be visible from long distances away.

- Soils impacts. Many soils in mountainous areas are extremely sensitive to disturbance. Construction of access roads on steep slopes is probably the biggest potential threat.
- Wildlife impacts. Birds flying into turbine blades is a major concern.
- Technical feasibility. Large-scale windpower generation is an untested technology in harsh climates such as Maine's.

In light of the limited supply of mountain resources and their value, it is unlikely that all such areas will be considered suitable for rezoning and associated development by the Commission. The Commission has also determined that off-site measures may not be an appropriate means of mitigating adverse impacts identified for particular proposals.

In the longer term, the most reasonable approach to windpower siting issues may be to conduct a comprehensive study of where they are most and least appropriate or perhaps a broader study to identify high mountain resources with particularly high resource values which are not appropriate for most development. The Commission believes such a study is best conducted as part of a statewide effort.

CHAPTER 4

p. 106: In the early 1990's, there was a high level of interest in the potential of the jurisdiction for wind-generated energy. The costs of wind-generated energy have dropped significantly, and portions of the region have relatively high sustained wind velocities. To date, the Commission has reviewed one major windpower proposal.

p. 131: In the mid-1990's, there has been considerable interest in the jurisdiction as a location for wind-generated electricity. While the Commission recognizes that windpower projects must be located where the wind resource exists, they have potentially significant on-site impacts due to their high elevation location and equally significant potential to adversely affect the jurisdiction's principal values.

Windpower and some other activities represent technologies or uses that are new to the jurisdiction. In the early 1990's, there were strong indications that large scale metallic mining operations would be proposed for some areas of the jurisdiction. In response, the Commission worked with the Department of Environmental Protection to draft uniform procedures and rules governing large-scale mining operations.

The Commission will attempt to stay abreast of new technologies and be prepared for proposals for new uses, especially ones that are likely to occur in high value areas. The Commission will try to be prepared to devote resources to assess the potential impacts of these new uses and to provide policy guidance on their appropriate development within the jurisdiction prior to acting on major development proposals.

CHAPTER 5

p. 136: **Energy Resources** (issue discussion p. 41)

Goal: Provide for the environmentally sound and socially beneficial utilization of indigenous energy resources where there are not overriding, conflicting public values which require protection.

Policies:

1. Encourage energy conservation and diversification and the use of indigenous renewable resources to increase the state's energy self-sufficiency.
2. Prohibit energy developments and related land uses in areas identified as environmentally sensitive where there are overriding, conflicting environmental and other public values requiring protection.
3. Permit new energy developments where their need to the people of Maine has been demonstrated and they are sited, constructed and landscaped to minimize intrusion on natural and human resources.
4. Review environmental and social impacts of energy development and establish permit conditions that minimize and mitigate adverse effects of such developments.
5. Prohibit hydropower development on river stretches identified as having overriding recreational or natural values.
6. Encourage development of new, small hydropower projects and reconstruction of existing hydropower projects where these can be undertaken in an environmentally sound manner.
7. Allow new or emerging energy technologies that do not have an undue adverse impact on existing uses and natural resources.
8. Limit the scale of new or emerging energy technologies where feasible to allow time for the Commission to evaluate the technology and its impacts in large-scale applications.